Science and technology

Achieve the beauty of refinement

Address of Hangzhou headquarters

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FASHION DESIGN LIFE

NABEL

NABEL

SERVICE

MANUAL SINTERED STONE

ABOUT NABEL

Explore the strength of the nature and art, and design for the future! Let great artists decorate your home.

Nabel derives from Hangzhou, the origin area of the Chinese pottery culture. Established in 1992, it boasts multiple world-leading production lines, with a production scale of 100 million square meters. Nabel exports more than 110 countries and regions. Enjoying worldwide reputation, it aims to become "a globally leading provider of high-end decorative material system".

We not only pursue excellent product quality, but also create a green and healthy living environment for our customers. We attach great importance to green development, energy conservation and emission reduction, and have positively turned from "traditional manufacturing" to "green intelligent manufacturing".

We've constructed the flue gas emission system with ultra-low emissions to achieve low carbon and emission reduction. We've also attained recycle utilization of raw material during production. We keep practicing the idea of sustainable development and create green, digital and smart factories. We target at boosting the industry's green development and leading a healthy lifestyle with high-quality green products.

In 2016, Nabel brought in the world first-rate production line of sintered stone, including wide_x0002_body kiln imported from Italy.
In 2017, the first set of sintered stone in China was born in Nabel, thus creating the era of sintered stone in China.
In 2020, Nabel adopted the intelligent full-body 5.0 technology and launched the first set of full-body antibacterial sintered stone.

We take inspirations from the nature and adopt the concept of artistic houses to keep expanding the application fields and boundaries of sintered stone, covering wall, floor, countertop and furniture finishes. Nabel committed to create more imaginative aesthetic spaces of sintered stone for our customer.

Nabel has led the industrial development through technical innovation and served as a pronoun of quality, beauty, green and environmental protection. We're willing to share the sintered stone aesthetics with everyone, jointly explore the strength of the nature and art, and provide a more comfortable spatial experience that is closer to the nature for our customers!

1992
Since

50 Items
Provincial and ministerial level sciencve and technology awards

800,000
Square Meters of Factory Area

5 Top
Provincial and Ministerial Science and Technology Awards

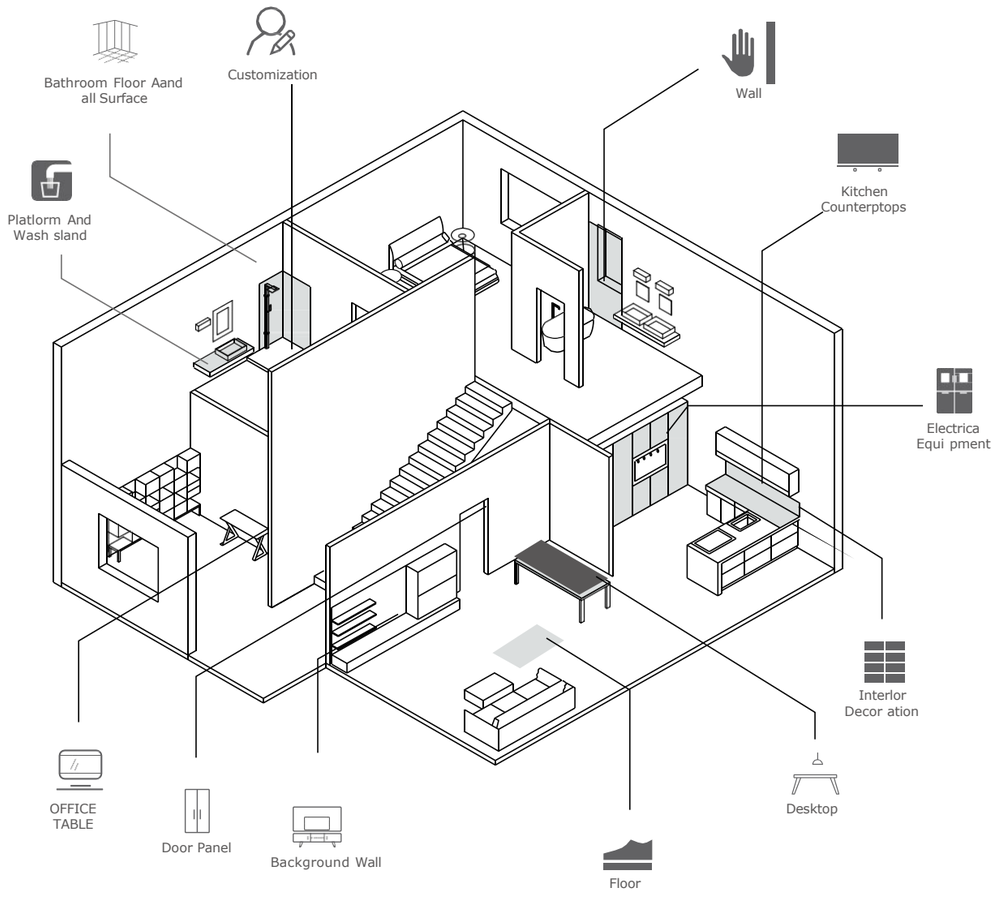
39
Companies Branch System

0.35-0.5 mm
Dense Joint Paving

Space **Applications**

Nabel sintered stone adopts Nabel patented formula, which has the characteristics of high density and hardness, and has super physical properties.

In daily applications,it can withstand the temperature change of sudden cooling and heating, and has superior properties such as abrasion resistance, scratch resistance, acid and alkali corrosion resistance, waterproof, antifouling. The surface is antibacterial and bacteriostatic, making it easier to clean.



Scenario **Standard**


Countertops


Kitchen Sinks


Kitchen Wall


Bathroom Cladding


Public Wall & Floors


Facades


Table


Stairs


Interior Wall

We Protect **Your Health**

Safe Antibacterial

Suitable for all types of environments, especially in areas where bacteria are prone to reproduction.
After adding antibacterial materials, cooking or grilling can be carried out between the surfaces of the stone slabs.
Nabel Antibacterial Sintered Stone has better moisture and mold resistance than traditional plates, helping to eliminate the growth of bacteria such as Staphylococcus aureus and Escherichia coli.

Technical **Features**

Easy to clean and maintain

Any dirt can be easily removed. Resistant to various chemical cleaning agents, such as bleach.

Ultra strong wear resistance and scratch resistance

The high hardness makes it difficult to scratch and grind.

Suitable for contact with food

It does not contain any harmful substances and is suitable for contact with food. Food can be directly placed on the surface of the Sintered Stone for processing.

High UV resistance

100% natural, the color will not fade even when exposed to sunlight or other extreme weather conditions.

High temperature resistance

Not flammable, resistant to high temperatures, and will not release any harmful substances at high temperatures.

Low water absorption (less than 0.1%)

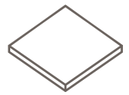
High strength, good compactness, and almost zero absorption level

SINTERED
STONE
Nabel
1992 ▸ 2025

SINTERED STONE **Transportation standards**

Scenario **Standard**

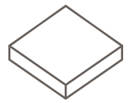
Dimensions (mm)	Product	Interior/exterior cladding	Countertops
3200x1600x20	●	●	●
3200x1600x12	●	●	●
3200x1600x5.8	●	●	
2700x1200x5.8	●	●	
2400x1200x9	●	●	●
2400x1200x5.8	●	●	
1600x1200x12	●	●	●



5.8mm

FULL-BODY THICKNESS

SIZES 3200x1600mm
2700x1200mm



12mm

FULL-BODY THICKNESS

SIZES 3200x1600mm

20mm

FULL-BODY THICKNESS

SIZES 3200x1600mm

1.PACKAGE

1.1 WOODEN A FRAME

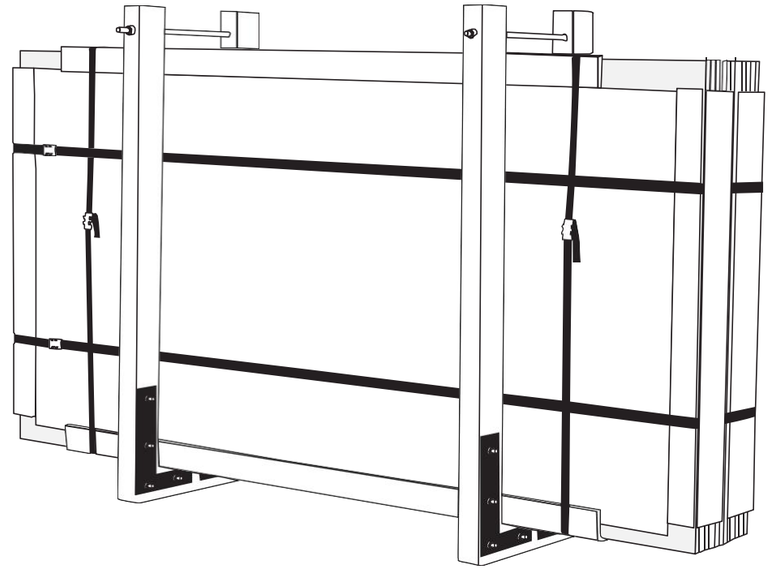
Nabel Sintered Stone has several sizes' Wooden A Frame.
Size 1: 3320x740x1900mm for 3200x1600mm
Size 2: 2800x750x1925mm for 2700x1200mm
Size 3: 2500x740x1950mm for 2400x1200mm & 1600*1200mm

Size (mm)	Pcs/Ctn	Square Meters	Kgs/Ctn
3200x1600x20	12	61.44	3150
3200x1600x12	20	102.40	3150
3200x1600x5.8	40	204.80	2630
2700x1200x5.8	40	129.60	1930
2400x1200x9	35	100.80	2247
2400x1200x5.8	40	115.20	1712
1600x1200x12	40	76.80	2232

The maximum number of pallets and their gross weight for each A Frame packaging for each size

1.2 WOODEN BUNDLE

Nabel Sintered Stone's 3200*1600mm sizes could be packed on Wooden Bundle.



Size (mm)	Pcs/Ctn	Square Meters	Kgs/Ctn
3200x1600x20	13	66.56	3330
3200x1600x12	23	117.76	3530
3200x1600x5.8	46	235.52	2932

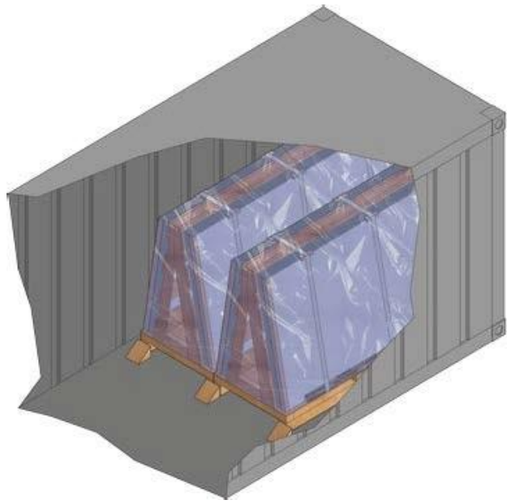
The maximum number of pallets and their gross weight for each BUNDLE packaging for each size

1.2 WOODEN BUNDLE

Nabel Sintered Stone can be transported in 20 foot or 40 foot containers, depending on the type of container, capacity, and destination country.

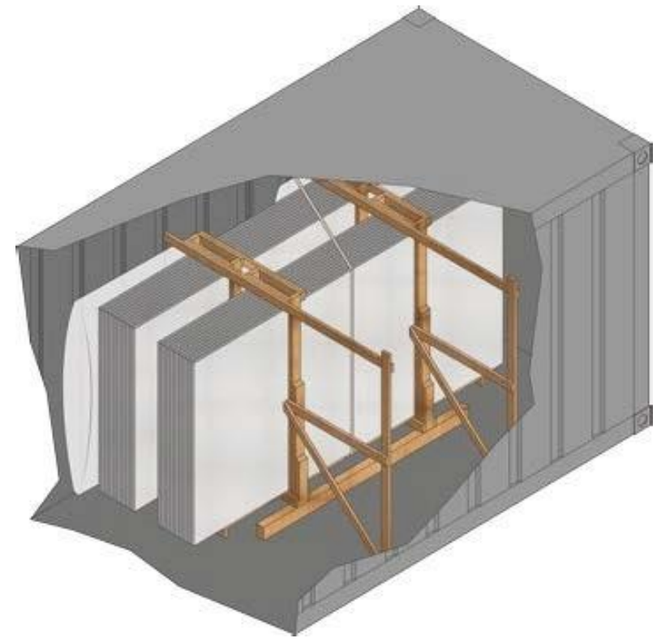
These instructions must be operated in accordance with the current regulations of the destination country/region.

The following are our products of different sizes. How many can be loaded in a 20 foot container or a 40 foot container, respectively. (Gross weight less than 26000 KGS)



A FRAME

Size（mm）	20 Foot Container	40 Foot Container
3200x1600x20	3 A Frames 36 Pcs 9450 KGS	9 A Frames 98 Pcs 25850 KGS
3200x1600x12	3 A Frames 60 Pcs 9450 KGS	9 A Frames 164 Pcs 25950 KGS
3200x1600x5.8	6 A Frames 240 Pcs 15780 KGS	9 A Frames 360 Pcs 23670 KGS
2700x1200x5.8	6 A Frames 240 Pcs 11580 KGS	12 A Frames 480 Pcs 23160 KGS
2400x1200x9	6 A Frames 210 Pcs 13482 KGS	12 A Frames 404 Pcs 25988 KGS
2400x1200x5.8	6 A Frames 240 Pcs 10272 KGS	12 A Frames 480 Pcs 20544 KGS
1600x1200x12	6 A Frames 240 Pcs 13392 KGS	12 A Frames 465 Pcs 25989 KGS



BUNDLE

Size（mm）	20 Foot Container	40 Foot Container
3200x1600x20	7 Bundles 91 Pcs 23310 KGS	/
3200x1600x12	7 Bundles 161 Pcs 24710 KGS	/
3200x1600x5.8	7 Bundles 322 Pcs 24710 KGS	/

2.Handling and storage

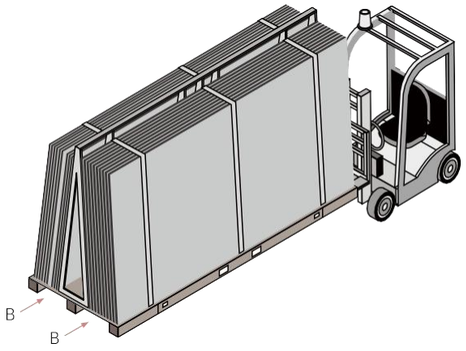
2.1 Moving A-Frames with a forklift

Nabel slabs must be treated under safe conditions to maintain their original appearance and prevent accidental damage. We suggest being extra careful during the processing phase to ensure that the area is clean and has no signs of movement.

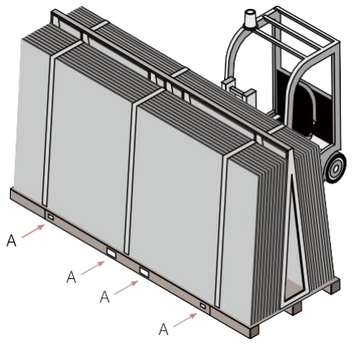
Before the handling phase, the A-frame must be loaded symmetrically to avoid problems of instability. The operator must verify that the slabs are secured to the A-frame with the specific hoops before beginning the handling process. It is important to be very careful when handling the material because the outer edges of slabs loaded onto the A-frames are not protected.

A-frames have two grab points for handling with the forklift:
“A” is the transversal grab point; center distance of at least 740mm.
“B” is the longitudinal grab point.

Use a forklift with the appropriate maximum load capacity. The laminated panels loaded on the A-frame at the warehouse or manufacturer's premises must preferably be handled using the "A" lateral gripping point. This means using at least 1200 mm long forks and forklifts to load the A-frame onto the 3200 mm side of the forklift. The capacity should be at least 3500 kilograms. If the decision is made to use the "B" grip, a forklift with a capacity of 3500 kilograms must be used, and the length of the forklift must be at least 2800 millimeters. Ensure that the load on the fork is balanced and stable, and does not sway. During the loading and unloading phase, insert the fork under the A-frame from the forklift and container using the two designated grip points "A" and "B" in the following paragraphs. During loading and unloading and subsequent transportation Even if it is one slab, use cloth or plastic clamps/straps to fix the slab to the A-frame. Do not use metal chains to secure the flat panel. Before releasing the material from the clamps that secure it to the A-frame, please ensure that the A-frame is on a horizontal surface to avoid any risk of slab falling.



A-frame forked in grab point B,
using long forks at least 2800 mm



A-Frame inforcato dal punto di presa A
with a space in-between of at least 740mm

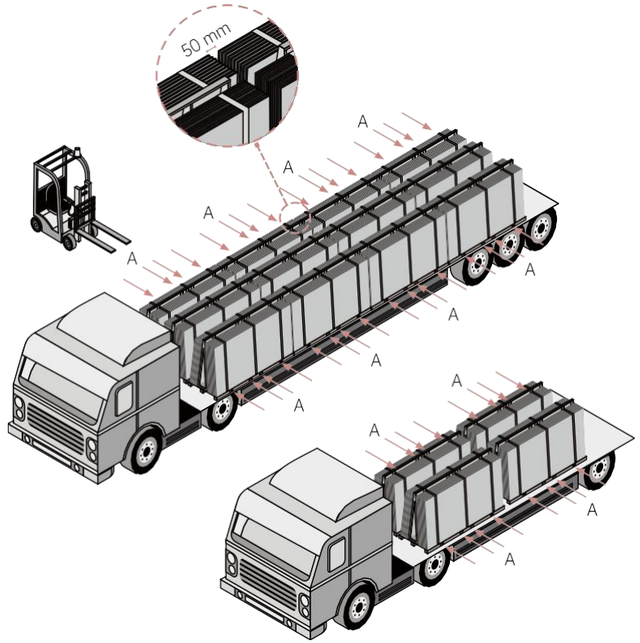
2.2 Loading/Unloading A-Frames on/from Lorries

To load or unload slabs on a lorry with an openable bed, position the lift truck forks under the A-frame in the two “A” grab points with a center distance of at least 740 mm.

Use forks with a minimum length of 1200 mm to and place the A-frame in a central position on the lorry.

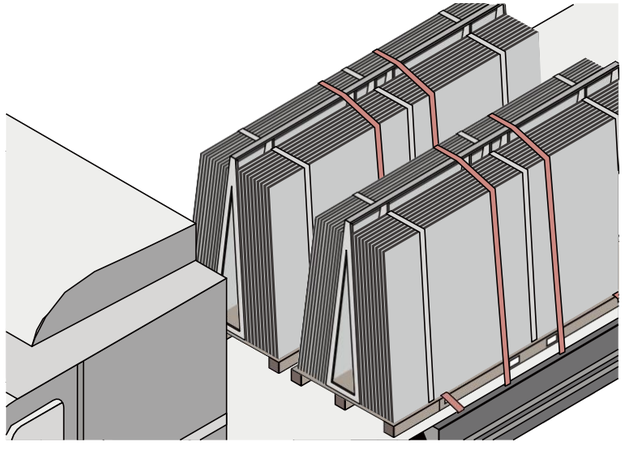
To safely transport slabs on lorries, fasten the A-frames to the lorry bed by securing them at the base of the wooden platform and also at the tallest point of the metal structure. Use suitable straps in polyester or similar materials to secure the A-frames. To load other rows of A-frames, make sure the distance between the slabs is at least 50 mm.

Before unloading, always check to see how the A-frames were blocked so that you can effectively remove those blocks.



When loading and unloading, the operator must pay attention to people in the surrounding areas and avoid instability of the load. For this reason, the load must always be kept low during transport and raised only when it is near enough to the lorry to be loaded.

Below is an example of loading an A-frame on a standard lorry 13.60 m in length.

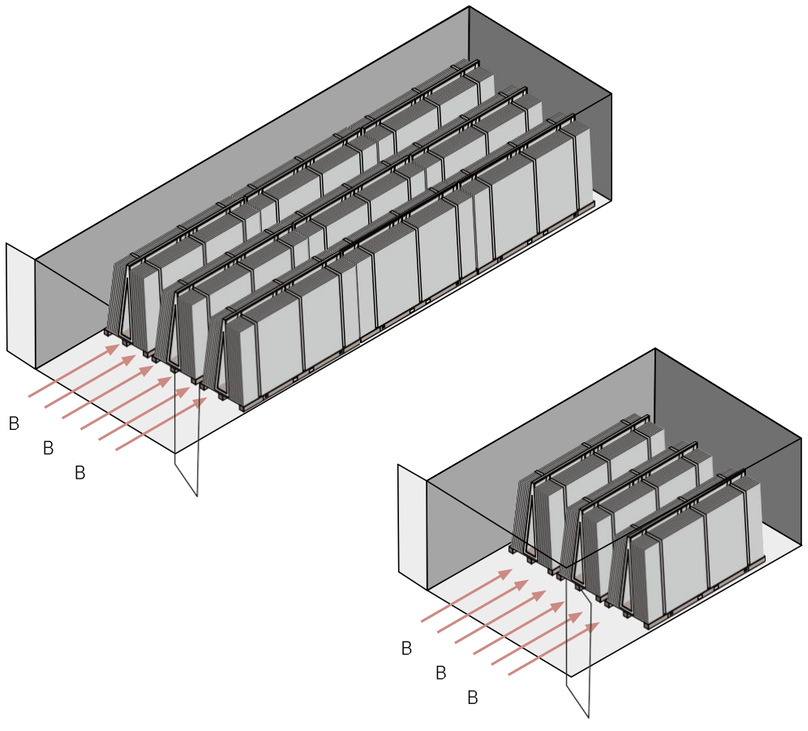


2.3 Loading/Unloading A-Frames into/from Containers

Use a pallet mover or forklift with 3500 kg capacity, with extensions of a minimum length of 2.80 m during the loading and unloading phases of the material if using a container. The operator handles the full A-frame, picking it up and lifting it from the two “B” grab points.

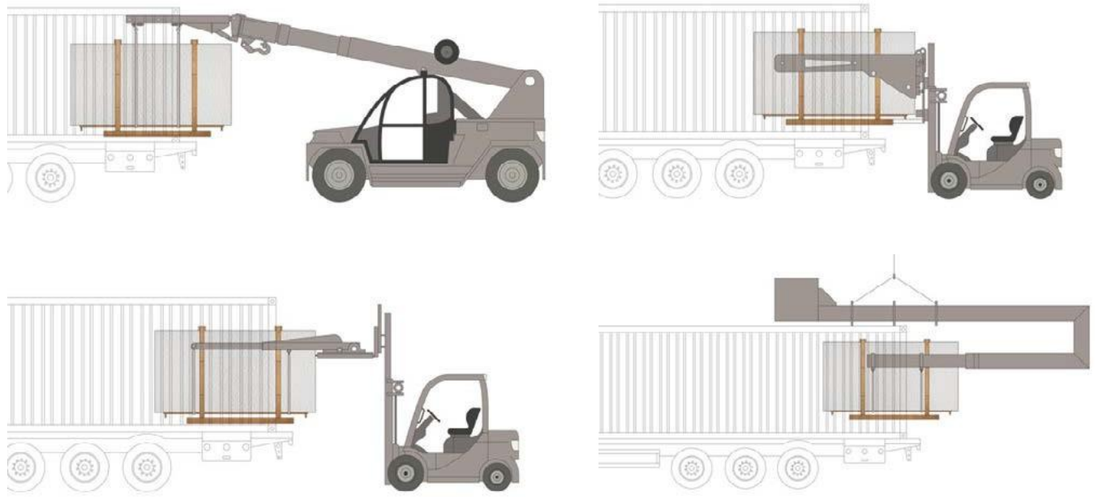
When loading, verify the correct stability of the material, and tie and fasten the A-frames together and to the cargo area. For safe transport in containers, fill the empty space between A-frames and rows of A-frames with airbags.

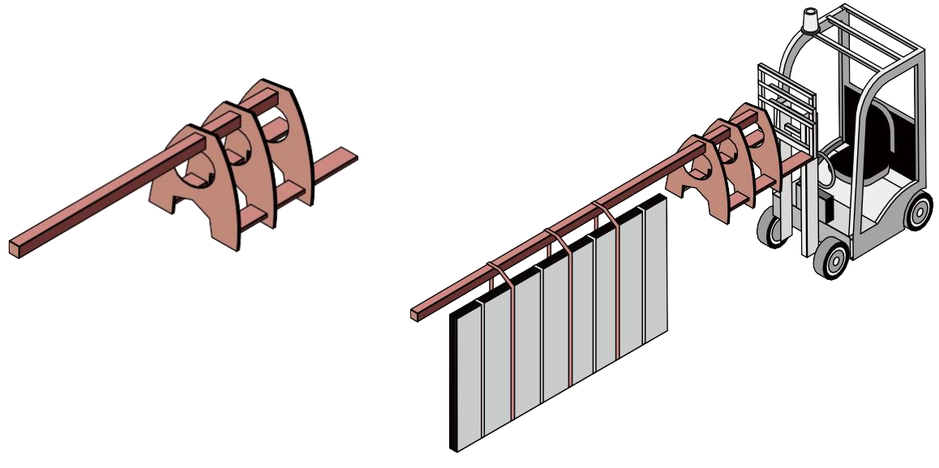
Before unloading, always check to see how the A-frames were blocked so that you can effectively remove those blocks. Outside the container, always handle the material by lifting the A-frames with the “A” grab points.



2.4 Loading/Unloading Bundles into/from Containers

For the unloading of the bundles, additionally to the pallet truck described above, there are also devices on the market that can be used with normal lifting equipment (cranes, forklifts, overhead cranes).





2.5 Processing a single slab

2.5.1Handling with fixtures

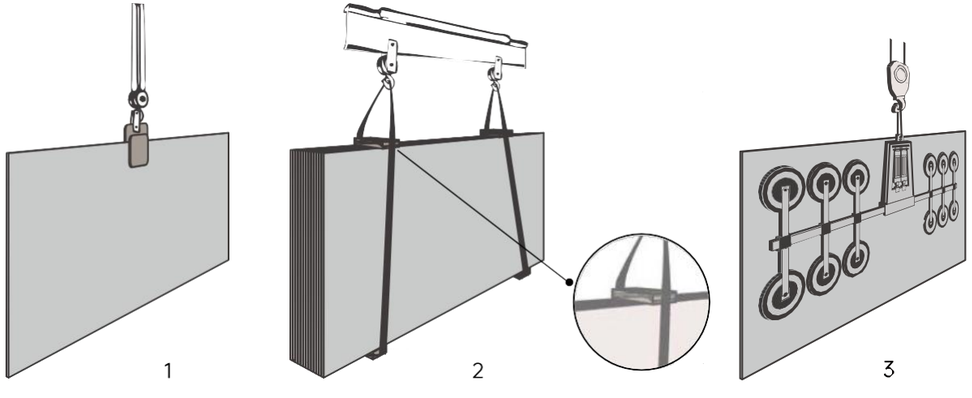
Slabs can be moved individually using rubber-coated canvas straps, rubber grippers or suction cups. Under no circumstances should steel chains or ropes be used as these may ruin the material.

To grip the individual slab, it is recommended to position the gripper at the load center to balance the weight and minimise oscillations (as shown in figure 1). When putting down a slab with the gripper, make sure that between what is being positioned and the support (other slab or floor) there are no empty spaces.

To grip multiple slabs, it is recommended to use a balancing frame connected to canvas straps spaced on the bottom and on top of the slabs by a wooden shim slightly longer than the slab pack (as shown in figure 2). In this way, the stress exerted during handling does not weigh on the slabs, preventing material breakage.

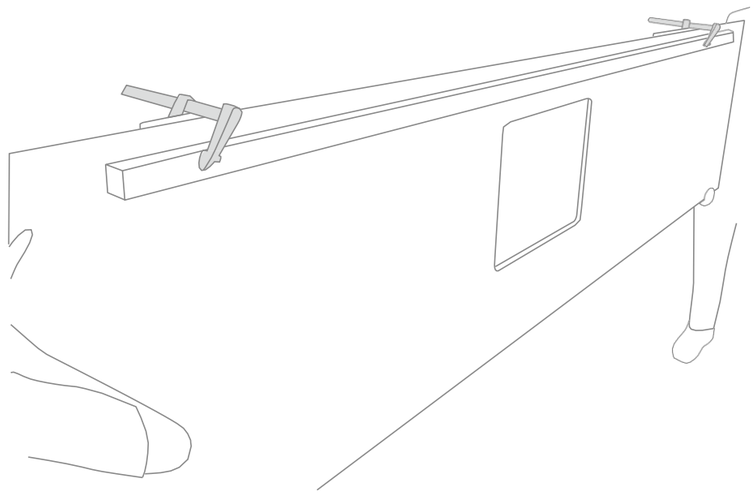
Handling using suction cups is permitted (as shown in figure 3), subject to verification of compatibility with the roughness of the surface.

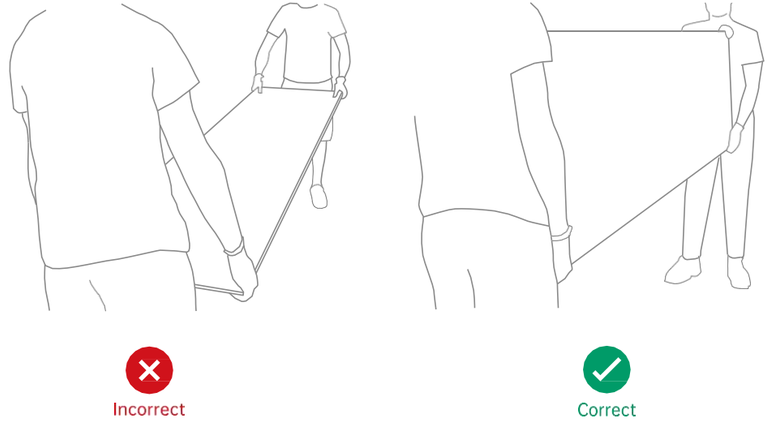
Before proceeding, always ensure that the load to be handled is within the maximum capacity of the lifting equipment.



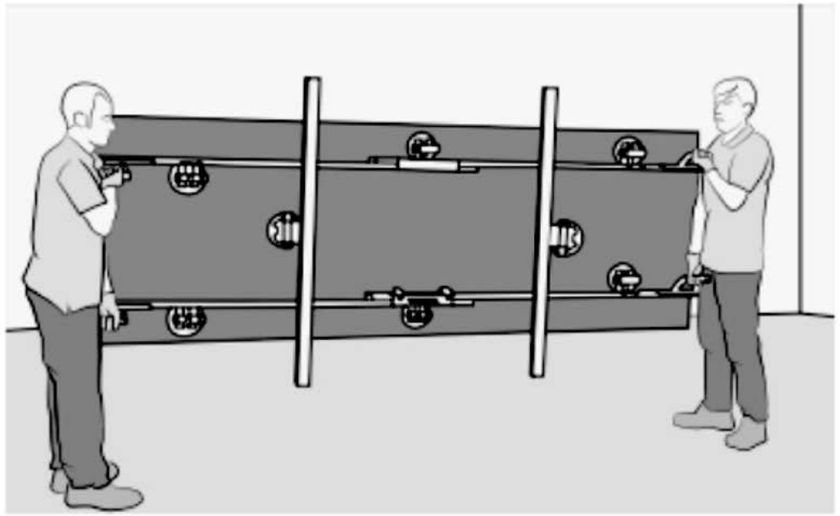
2.5.2 Manual handling

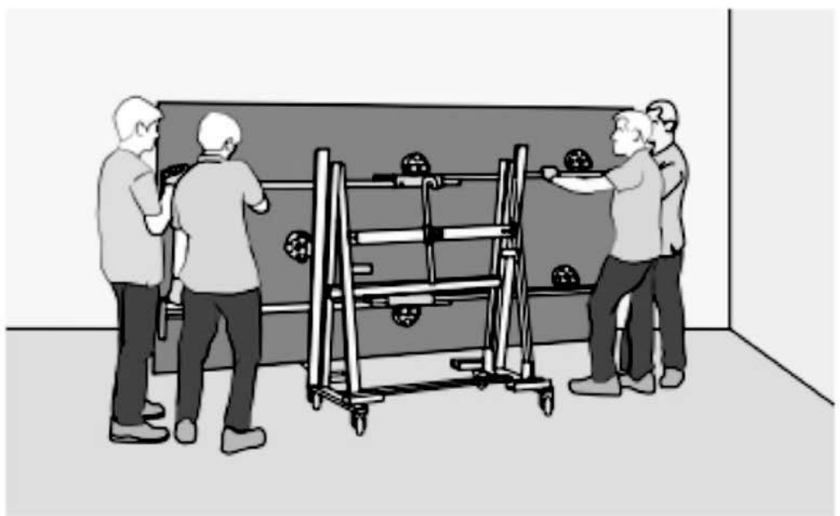
Follow the handling safety recommendations to avoid material damage during the handling process.





It is important to work with correct posture, avoiding strain on the lower back, and to use specific gloves to improve grip and avoid abrasions. To facilitate slab movement, especially on pieces weakened by holes or openings, and to facilitate installing the slabs on walls, special frames with suction pads are available. Use suitable systems for the dimensions of the slab to be moved. Keep the slab weight in mind and make sure you have enough personnel to install it properly.





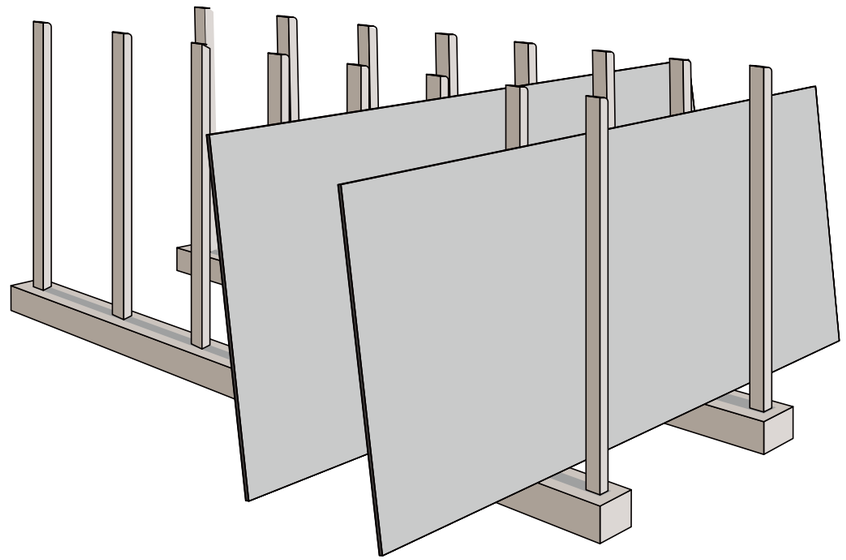
2.6 Storing the Slabs

NABEL slabs can be stocked in warehouses on specific supports and metal structures like tripods or racks, suitably constructed and with protective structures in wood, rubber or plastic where the slabs will be positioned vertically. The A-frame used for packaging the NABEL slabs can also be used to store them.

Safely store the material using dedicated wedges or belts to prevent sliding. If stored outside, it is advisable to make sure that the stability of the A-frame is guaranteed in case of harsh weather. The slabs set vertically on the A-frames will bend slightly when they are set down. This is not a defect of the product and does not compromise processing in any way. This bending disappears when the slab is set on a horizontal surface.

Regardless of the storage method used, we recommend not placing other materials, especially polished finishes, on NABEL slabs. If you need to place something on the slab, please use appropriate shims to separate the materials.

When storing polished finish slabs, if the wax coating cannot be guaranteed, or if the wax is not enough to prevent the board from contacting in the subsequent processing, insert shims between them.



When the slabs are transported on the A-frame, they are always fixed with at least two straps or woven straps. When it is necessary to remove the straps from the A-frame or package, the straps must be removed immediately before starting work.

Before removing the tie straps from the A-frame, one of the following two restraint systems must be used: a safety bar (U-shaped structure) or an upper restraint device (inverted U-shaped stop or similar device used for the upper part of the A-frame) to ensure that they do not fall on workers in the event of the board loosening from the A-frame.

U-shaped safety retainer

U-shaped safety retainer (inverted U-shaped)

Please remember that the piers and slabs have a high weight, so whenever they need to descend, never try to stop them. Never stand under a falling heavy object.

When using a bridge crane for transportation, it is necessary to maintain a safe distance from the goods being transported and consider the possibility of A-frame or slab falling. If the load must be guided, use ropes or similar devices. In the A-frame storage area, a 1-meter wide aisle should be left between the rows of A-frames.

Damaged parts may have very sharp edges. Wear gloves, cut resistant sleeves, and goggles whenever handling or processing slabs.

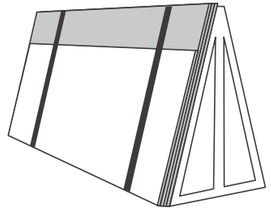
It is recommended to use an A-type frame or storage rack to store the slabs. When it is also recommended to store slabs on the A-frame, fix the already stored slabs with a ratchet belt.

Place the slab along the length direction on a beam with sufficient protection to prevent cracking of the slab.

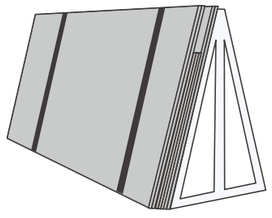
When using A-shaped frames to support Sintered Stones, at least three support points are required for 5.8mm slabs, evenly distributed along the back of the slab; Suggest using complete supports - for example, unused granite or marble slabs with sufficient width. Avoid placing large boards on smaller ones:

Storage of NABEL slabs in the shop

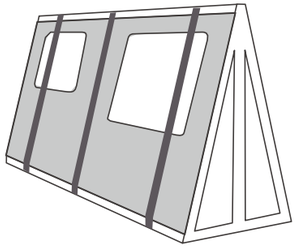
The supporting components must be able to support the entire surface of the parts during transportation. A support component that is too small may cause parts to break:



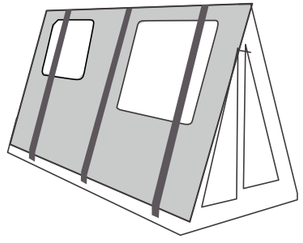
Correct



Incorrect



Correct



Incorrect

Regardless of the storage method, we recommend not placing other materials on the NABEL slab, especially on the polished surface. If it is necessary to place something on the board, separate the materials with appropriate barriers.

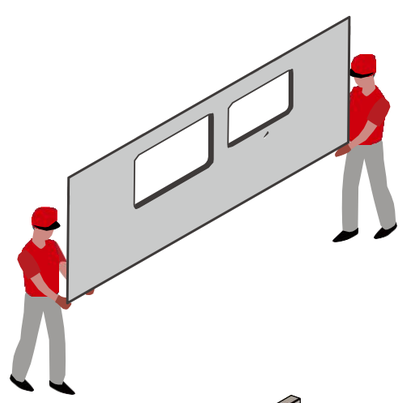
3. Transport and installation of the finished countertop

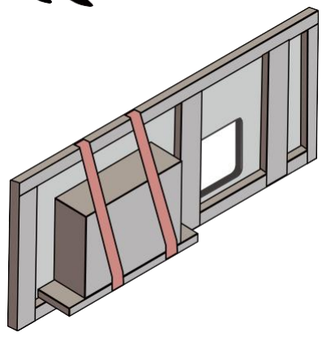
During handling, transport and installation of the finished countertop, remember to pay the utmost attention to possible twisting, torsion or impacts, in particular on the edges. Reviewing jobsite access with installers can assist in comfortable and efficient installation.

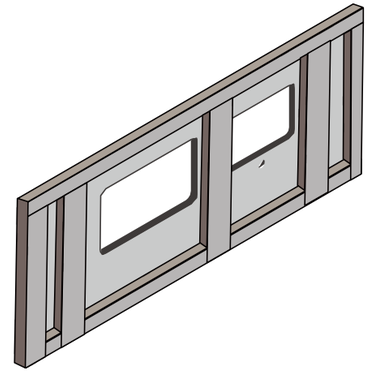
3.1 Packaging and transport

After finishing the processing, move the finished top into a vertical position and keep any holes towards the top. Never use the holes as lifting points, especially during transport, to prevent cracks or breakage.

We advise packing the countertop inside wooden crates or suitable frames and taking care that the edges and corners are protected with foam or polystyrene guards.







If the top has a preassembled basin, it must be encased in a wooden crate with a support that can sustain the weight of the sink, so that it does not cause the top to twist.

4.Bridge Saw Machine

5. Processing and Cutting

5.1 Pre Processing Inspection

NABEL recommends deep-cleaning the slab and doing a meticulous visual inspection to check whether the slab complies with the quality requirements. Check for the following when carrying out the visual inspection.

- Fissures/Cracks
- Stains
- Slab to slab colour/tonality match
- Thickness
- Shine variations
- Flatness/Warpage
- Surface contamination
- Pinholes or blisters
- Imperfections

This should be the first step prior to starting production. Doing the inspection in a well lit area to identify possible imperfections not seen when flat is recommended.

*No claims will be accepted for installed or manufactured material when defects were already present upon delivery of the material. Stone masons are responsible for determining whether the slabs are adequate for use. If it is determined that the material is not of suitable quality, they should be exchanged before the slabs are cut or modified in any way.

A. Flatness/Warpage

To check the flatness of a slab, it should be positioned horizontally on a completely flat base.The flatness is measured by placing an aluminum rod or similar object on the surface of the slab, covering the entire width or length of the slab.

Determining warpage or flatness of an upright/vertical slab is not recommended.

MAXIMUM TOLERANCE IN THE SLAB WIDTH: 2 mm
MAXIMUM TOLERANCE IN THE SLAB LENGTH: 4 mm

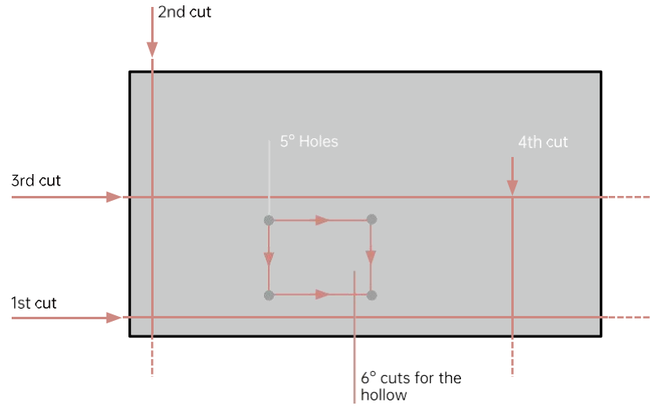
B. Tone

The deviation of hue is more obvious in a single model with different thicknesses, because each thickness is produced in a different way. Before cutting, visually inspect the slab to ensure that the color tone of different slabs is acceptable. Perform this inspection under lighting conditions similar to the installation location. We suggest not merging slabs from different batches.

5.2 Disc cutting

To cut the slab, use diamond cutting discs suitable for processing porcelain stoneware, which are in good condition, on industry approved machinery.Both segmented and non-segmented blades can be used.The advancement of the slab in the cutting process must be in the same direction as the disc rotation.The cut takes place through the erosion of the width proportional to the width of the disc.

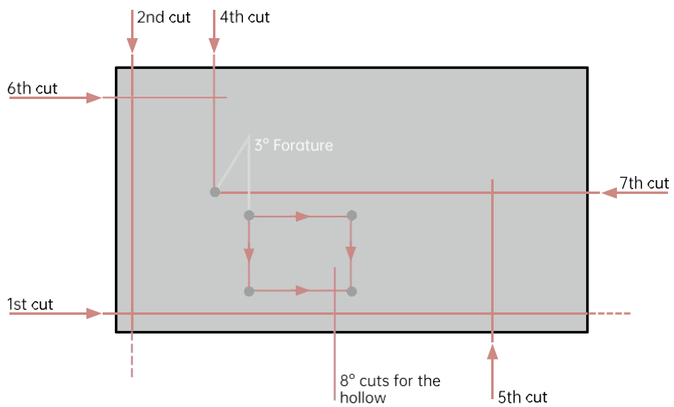
Here is an example of a cutting scheme that can be done with a disc cutting process.



5.2.1 Cutting Scheme

If you want to protect the piece of slab not being used to make the table or countertop, move the part above 4th cut before you start it. If you are making “L” shaped cuts or cutouts with a disc, first it is necessary to make a hole in correspondence of each corner and then make straight cuts. The last part of the cut near the hole can be done manually with a grinder.

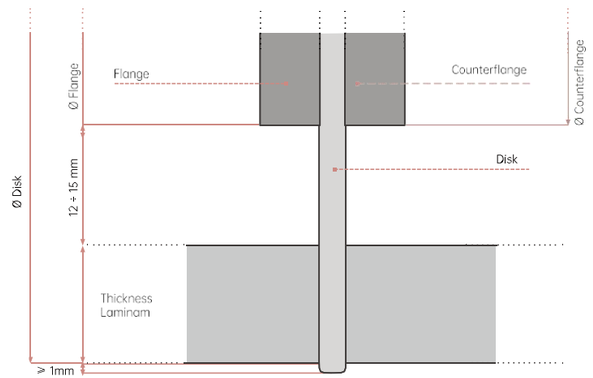
When performing cuts 5 and 6, the disc must go past the intersection of cuts 7 and 4, respectively, for a length of at least the diameter of the disc. “L” shaped pieces must be handled very carefully to prevent torsion and twisting that would damage the slab.



5.2.2 Indications

- Smaller disc diameters require greater rotation speeds applied to the mandrel.
- Slower feed rates produce higher quality cuts. Excessive speed could require making a larger bevel to correct imperfections caused on the edge.

- Given the hardness and strength of the material, it is necessary to turn the nozzles so that the water jet is pointed on the disc blade to guarantee cooling and in correspondence with the incision on the slab to remove debris from the cut.
- The disc must cut completely through the slab thickness and come out at least 1 mm on the other side.
- The process is successful if vibrations and movements of the slab are reduced to a minimum during the cutting processes. To limit these situations, we advise using a panel made of rubber or other suitable material that will not reduce the abrasive capacity of the disc.
- Set the machine correctly to obtain inclined cuts in the slab.
- To make a good quality inclined cut, we suggest reducing the disc diameter and using a disc with a reinforced core that can diminish bending of the disc and therefore reduce vibrations on the slab. As an alternative, apply a flange and counter flange to stabilize a disc that is too big.



5.2.3 Parameters

The parameters indicated below were suggested by the main producers of cutting discs which have tested NABEL slabs, considering that the cut be made in a single stroke with a disc in good condition.To obtain these parameters, tests were run on products with white, medium and black bases.

If the manufacturer, under his/her own responsibility, wants to adopt faster speeds than those indicated, we suggest carrying out several preliminary tests while keeping in mind that materials with a white base are generally more sensitive to increased speeds.

Periodically, assess the maintenance levels of the disc and replace it when it no longer guarantees a good quality cut, with reference to the parameters indicated. To guarantee longer disc life and better cutting quality, we suggest reviving the blade with a block of concrete or quartz

Bridge Saw Cutting	Disc Diameter mm	Rpm	Feed rate (Black Color)	Feed rate (Other Color)
Nabel Sintered Stone 20mm	ϕ350mm	2800~4000R/min	500~700M/min	600~850M/min
Nabel Sintered Stone 12mm			650~850M/min	1150~1350M/min

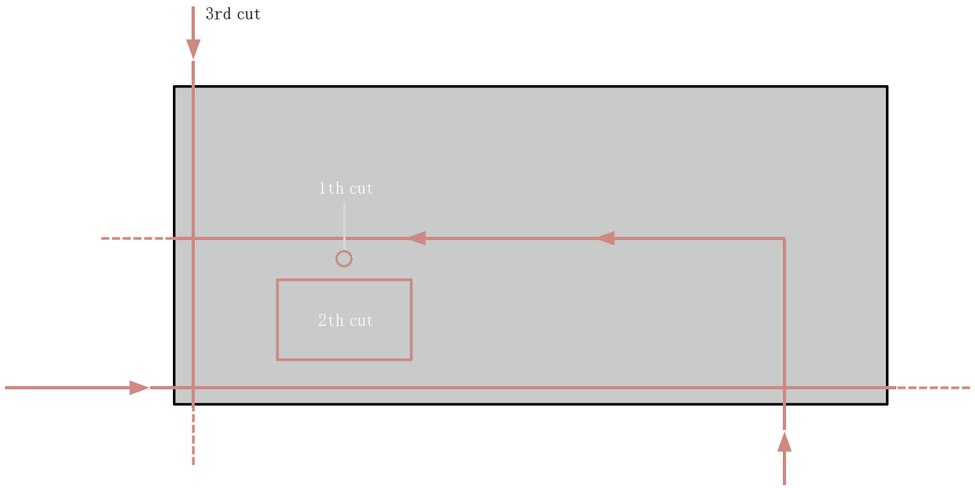
5.3 Water-jet Processing

NABEL slabs can be cut with water-jet machines. This method makes it possible to perform any type of cutting, shaping and drilling or making holes, with a high level of precision.

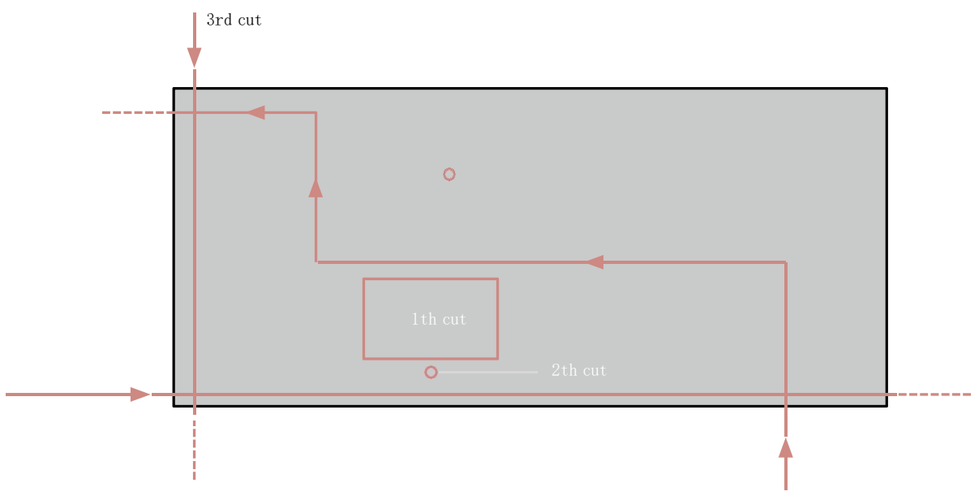
We advise making sure that the metal support grid is in good condition and planar, and that the piece is correctly blocked to prevent movements that could make it impossible to cut the slab.If the machine allows it, it is also possible to make 45° cuts. Adjust the processing parameters to obtain a er or rounder edge.Begin by cutting the larger cutouts and then do the smaller ones (for example, first cut the hole for the sink and then cut the hole for the tapware). We suggest starting and finishing the cut off the slab.

5.3.1 Cutting Scheme

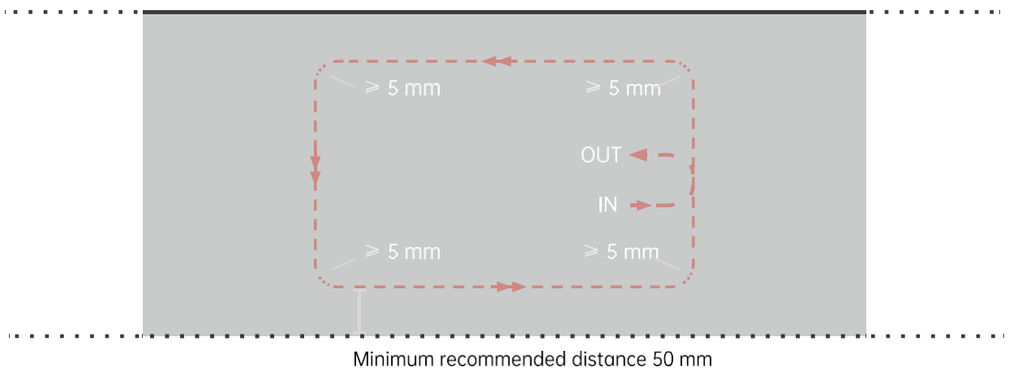
Here is an example of a cutting scheme that can be done with a water-jet process.



Here is an example of an “L” shaped cut that can be done with a water-jet process.



To make cutouts inside the slab, we advise starting the cut in a point that is inside the cutout area, and then gradually moving closer to the cut perimeter. Maintain the suggested minimum radius of 5 mm for internal corners.



5.3.2 Parameters

Water-jet Cutting	Pressure (MPa)	Cutting Abrasive	Feed rate （Black Color)	Feed rate （Other Color)
Nabel Sintered Stone 20mm	280~320	Mosh B0 (150-190g/min)	300~550mm/min	400~650mm/min
Nabel Sintered Stone 12mm			450~650mm/min	550~750mm/min
When cutting 20mm thick sintered stone slabs,a 20mm thick plastic pad should be placed on the machine table to prevent cracking during cutting.				

5.4 Numerical Control Processing

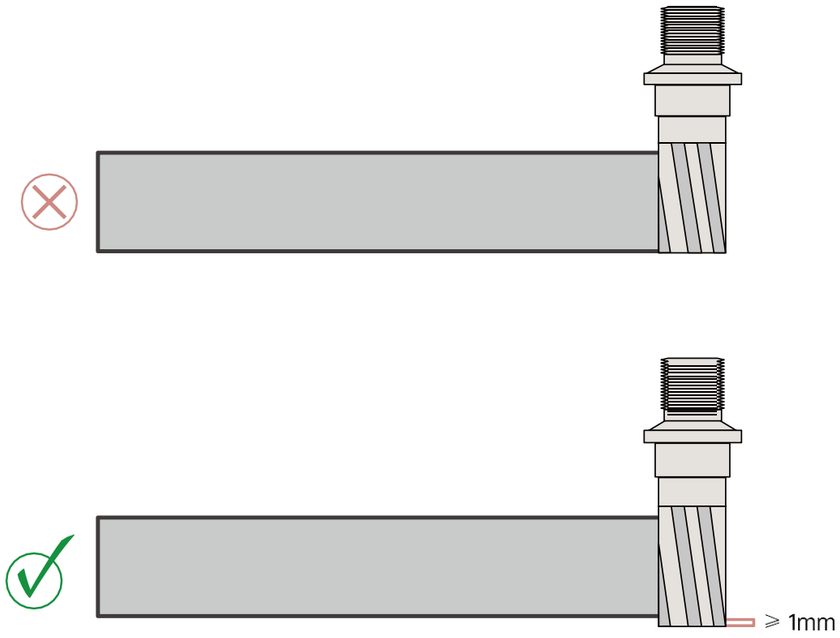
NABEL Sintered Stone can be cut with numerical control machines (CNC).

The most complex CNC machines offer the option of rotating and inclining the cutting head for many types of cuts.

Normally, CNC is used after shaping the top with a disc or water-jet cutter. This machine is used primarily to create cutouts for hobs and sinks, and to finish edges for flush tops, holes, edges and curved lines as well as wall scribing.

The tool must be diamond tipped and suitable for processing porcelain stoneware. The choice of tool depends on the specific process to complete.

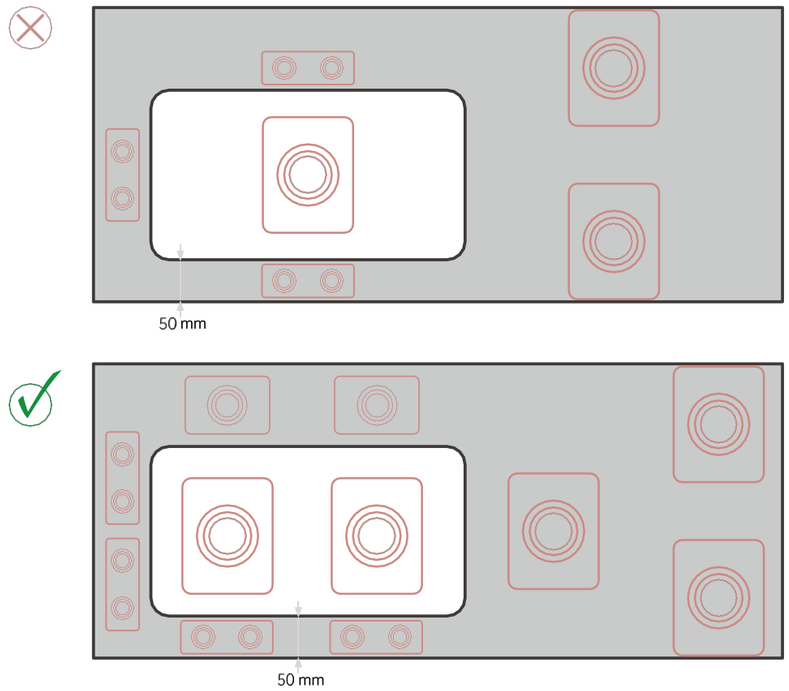
Do not make cuts or holes when the tool is oscillating.During the work, it is important to use plenty of water aimed in the right direction, both inside and outside the tool. The tool must be at least 1 mm wider than the thickness of the slab.



5.4.1 Positioning Suction Pads

Before beginning the process, check the correct hold of the suction pads on the back of the slab. If the hold is not satisfactory, use softer gaskets of the right thickness.

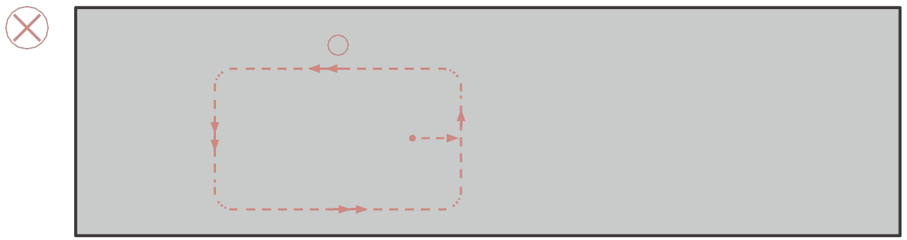
Correct positioning of the suction pads that hold the slab is a fundamental aspect of getting a good cut. For this reason, distribute the suction pads in a regular pattern to support the slab, including the part that must be removed. If you fail to do this, the part that is cut out could bend and cause crazing before the process is finished.

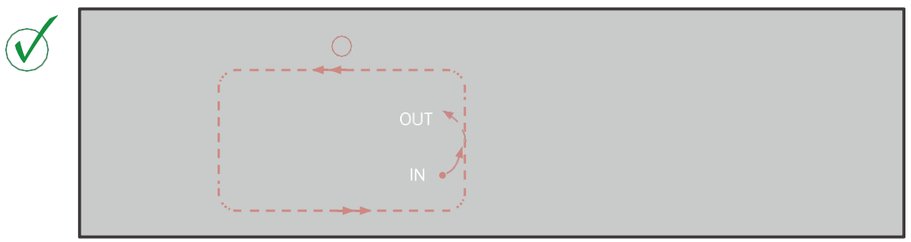


As an alternative to the suction pads, it is possible to use specific clamps: in this case, it is necessary to remember that the side with the clamp cannot be cut.

5.4.2 Flush Top Processing

Perform the cuts as shown in the scheme below without entering the perimeter of the 90 ° hole, which would compromise the quality of the final process.

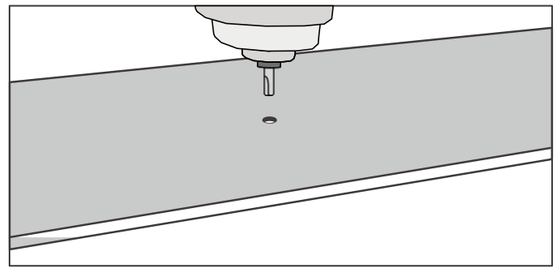




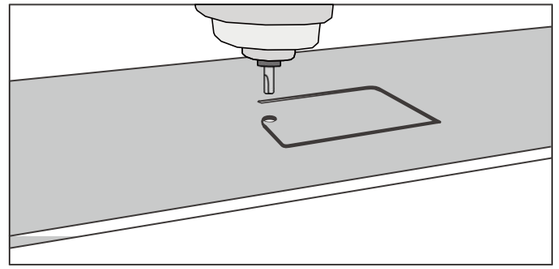
5.4.3 Flush Top Processing

We advise finishing the flush top before making the cutout.

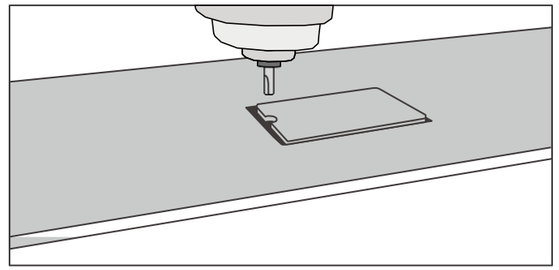
It is possible to cut a maximum recess of 4 mm in a NABEL 12+ slab and 8 mm in a NABEL 20+ slab, of a suitable size and depth according to the instructions on the technical sheet of the sink or appliance to install.



Drilling



Incremental cutting



Cut

5.4.4 Cutting Parameters

CNC	RPM		Feed rate Mm/min
Nabel Sintered Stone 20mm	Initial Hole	1800/3000	20/30
	Cutting Tool	3500/5500	200/300
	Flush Top	5000/8000	150/300
	Bevel	5000/6000	1500/2500
	Edge Polishing	3000/5000	1000/2500
Nabel Sintered Stone 12mm	Initial Hole	1800/3000	20/30
	Cutting Tool	3500/5500	200/300
	Flush Top	5000/8000	150/300
	Bevel	5000/6000	1500/2500
	Edge Polishing	3000/5000	1000/2500
Nabel Sintered Stone 9mm	Initial Hole	1800/3000	20/30
	Cutting Tool	3500/5500	200/300
	Flush Top	5000/8000	150/300
	Bevel	5000/6000	1500/2500
	Edge Polishing	3000/5000	1000/2500
Nabel Sintered Stone 5.8mm	Initial Hole	1800/3000	20/30
	Cutting Tool	3500/5500	200/300
	Flush Top	5000/8000	150/300
	Bevel	5000/6000	1500/2500
	Edge Polishing	3000/5000	1000/2500

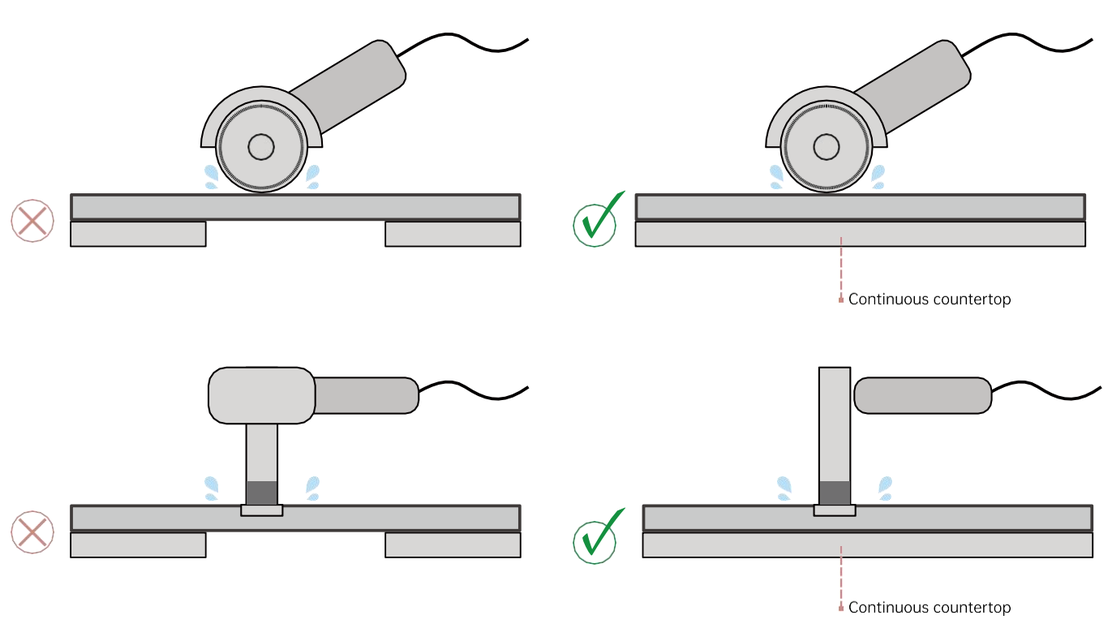
5.5 Manual Processing

It is possible to use a manual cutting tool to perform cuts on NABEL 12+ and 20+ slabs.

Through the use of accessories such as discs, diamond drill bits or abrasive pads with different grades, it is possible to obtain cuts, holes or finishes of edges or details of the countertop surfaces.

It is important to position the slab being processed in a suitable position to avoid movements and vibrations.

The area being processed should be bathed with water constantly or frequently, and the tool also, in order to guarantee correct cooling and the quality of the process.



5.6 Cleaning after processing

Cutting, drilling and similar operations generate dust residue due to abrasion of the material. This residue, along with the water required during the processing phases, tends to become solid on the surface when it dries.

It is, therefore, vital to ensure correct cleaning at the end of the processing phases because, if this is done wrongly or inaccurately, it could cause smears that are difficult to remove (particularly visible on dark colors).Clean off the processing residue from the surface of the slab with plenty of water, then dry with a paper towel and repeat the procedure until the surface is clean. Do not store any machine-processed material when wet.During assembly of the kitchen countertop, polyurethane or epoxy adhesives are used for panels, integrated sinks. etc.

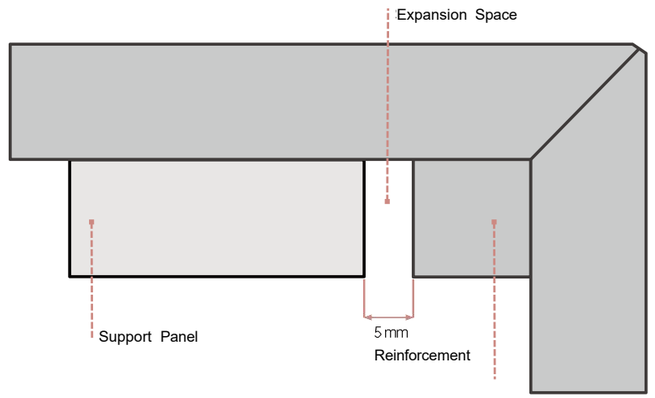
Epoxy products are designed not to be removable to ensure good performance over time. For this reason, they can stick to surfaces without being absorbed, but this makes them difficult or impossible to remove. It is, therefore, vital to remove them quickly by using soft sponges or cloths and cleaning products recommended by the suppliers.

Do not contaminate the rest of the surface with the cloths/sponges used to remove these materials. Do not move the finished surface with gloves that have adhesive products on them.

If any epoxy/polyurethane material is observed after installation of the countertop, they must be treated with basic products and soft sponges, but since they will have been completely hardened at that point, it might not always be possible to remove them.

5.7 Edges

We suggest reinforcing the joint by applying slats made from unused parts of the NABEL slabs, fixed with the same type of adhesive used to glue the 45° angle.



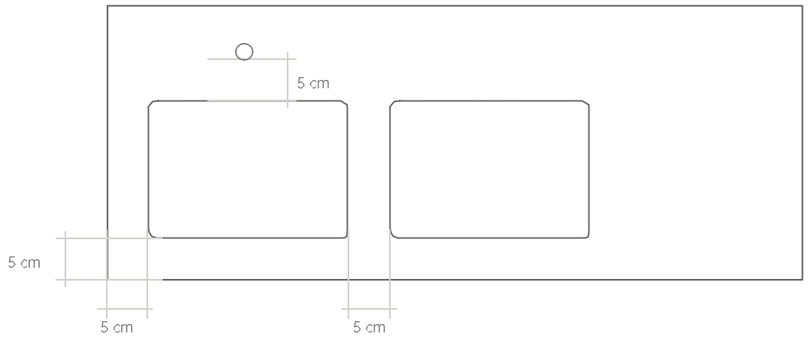
We suggest using two-component adhesives, generally epoxy based or equivalent, which can be purchased freely. These adhesives can be pre-colored or transparent, and specific-colored additives can be added.

We recommend proper and immediate cleaning of all glue and adhesives used, in compliance with instructions from their producers. Removal after the glue has hardened could prove to be impossible and would cause halos to form on the slab over time.

6.Installation of finished countertops

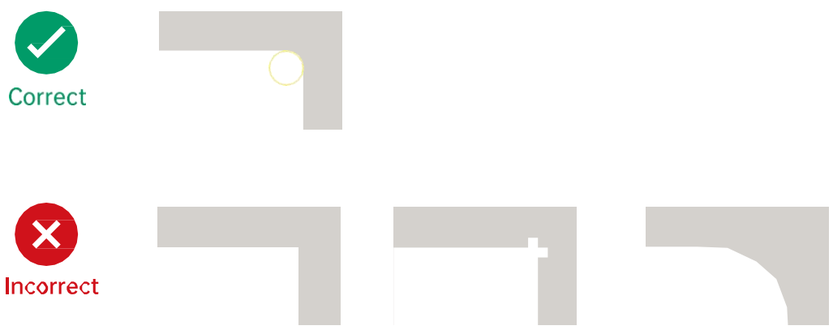
6.1 Cutout Design Guidelines

The minimum distance between a cutout and the edge of the slab must be at least 5 cm.NABEL recommends distances greater than 5 cm when the kitchen design allows as it makesthe countertop stronger.



IMPORTANT

All cutout corners must have a minimum radius of 5 mm. Never leave 90° angles. We recommend radiuses of more than 5 mm when the kitchen design allows as it will make the countertop firmer.



The correct way to create a cutout, except with waterjet and CNC, is to first drill the corners and then the rest of the cuts.

6.1 Cutout Design Guidelines

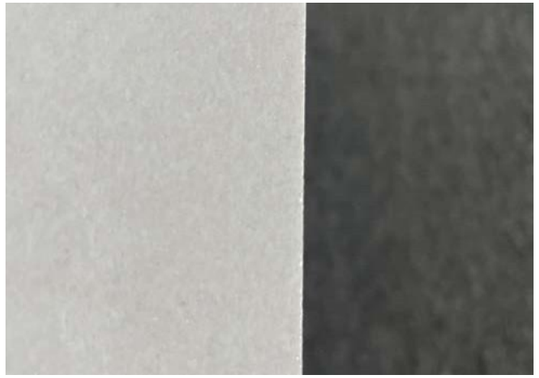
Guidelines for cutouts:

- Two straight cuts must never be joined.
- No squared inner corners.
- All inner corners must have a minimum radius of 5 mm.

The bottom and top edges of the cutouts are often a bit sharp or irregular; therefore BEVELLING them with diamond or abrasive sanders is recommended

Polishing the edges of the cutout is recommended to eliminate any micro-fissures created when cutting. The more intense this PROCESS is, the less risk there will be in the future.

Incorrect



Correct

6.2 Sinks

Flush sink

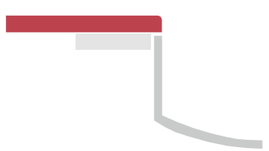
NABEL only recommends the installation of flush sinks in 12 mm and 20mm.

To perform the edge profile please check setcion no.5.3 CNC

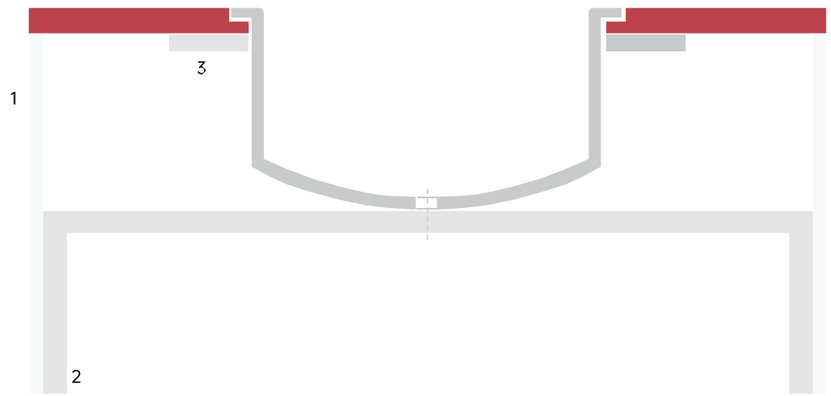
Removing more than 6 mm on a 12 mm slab or 10 mm on a 20 mm slab is not recommended.

Flush sink

To reduce the risk of splintering to a minimum, a round edge with a radius of at least 2 mm is recommended.recommended.



For large-size sinks, place a rod support structure under the sink so the weight is on the rods and not the countertop.



1. Furniture
2. Support rod
3. Reinforcement

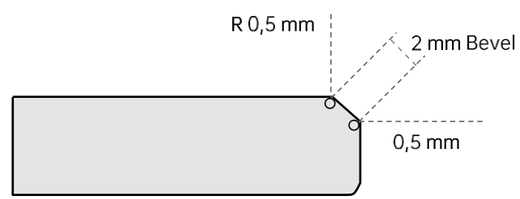
6.3 Edges And Joints

Edges

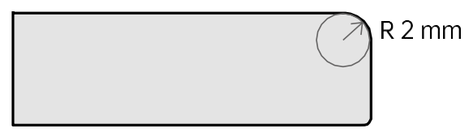
NABEL recommends the following minimum edge profile details to ensure increased edge performance.

It is the perfect compromise between esthetics and functionality.

The edge is formed by a 2 mm bevel and by two rounded edges with a radius of 0.5 mm.
The radius is barely visible but increases the edge impact resistance.

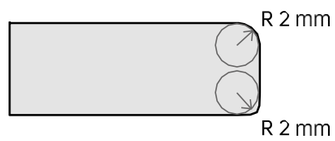


In high impact risk areas (sinks and dishwashers, for example), the edges could be as follows:

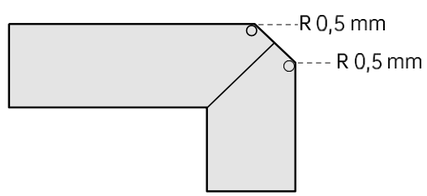


The greater the radius, the better it will bear any impacts. Please consider that the greater the bevel, the more base color is exposed”
The edges can be wet or dry polished using standard granite or marble polishing tools

Recommended edges for NABEL:



Round edge, R 2 mm

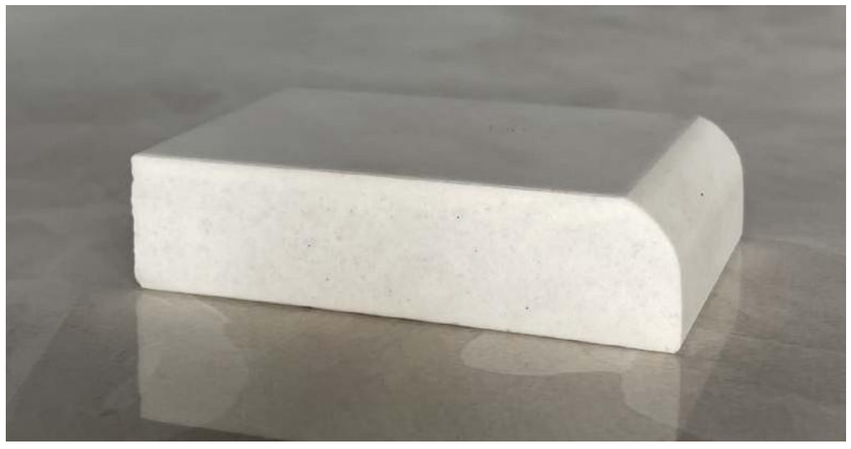


45º edge with a bevel, 2 mm

Reverse bevel/shark nose

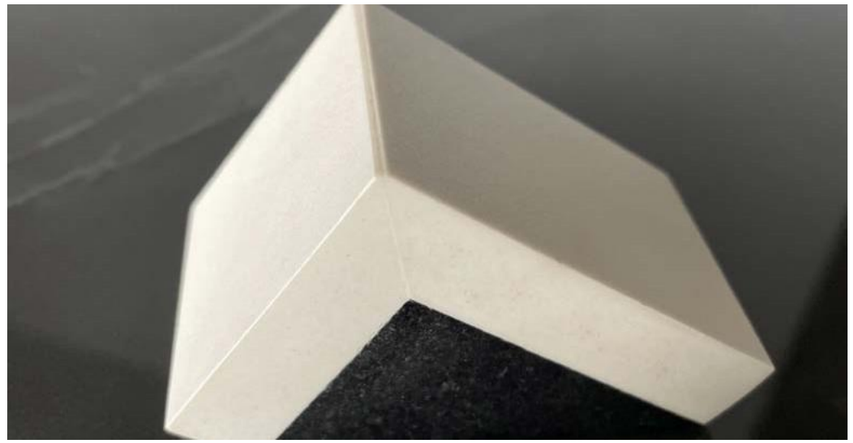
45º edge with a bevel 12 or 20 mm

Round polished edge

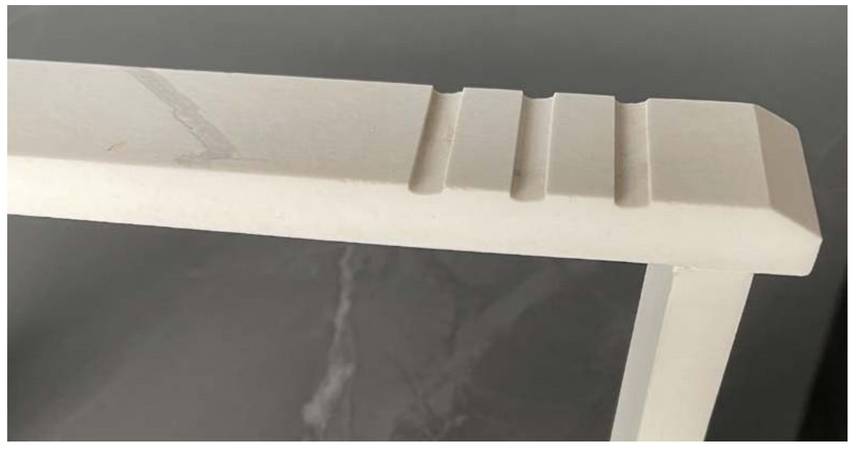


Reverse bevel/shark nose

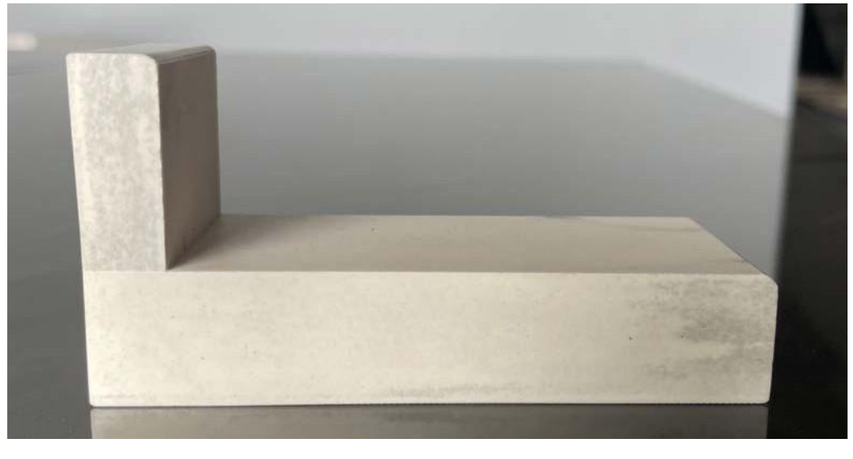
Straight mitred joint



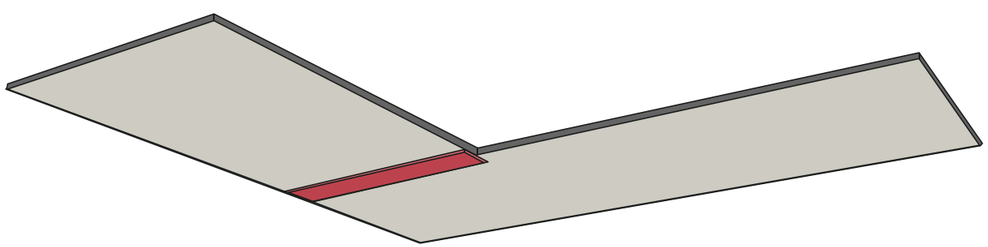
Overhang butt edge



Butt edge



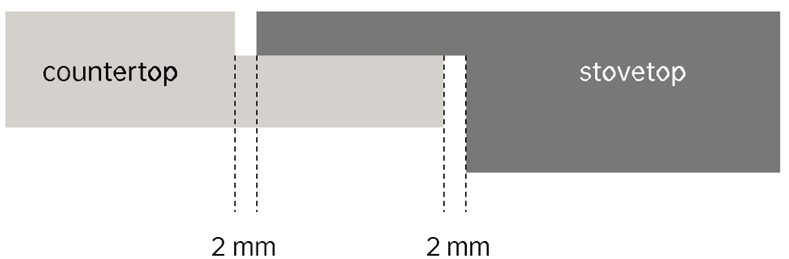
All joints must be sufficiently supported, either by an additional reinforcement underneath or support of the cabinetry. The support must run the full length of the joint.



Additional support using a strip of NABEL undermeath the joint

6.4 GLASS-CERAMIC / INDUCTION STOVETOPS

The minimum distance between the countertop and a stovetop must be 2 mm.



Use the right heat-resistant silicone or the gasket(s) supplied by the stovetop manufacturer.Removing more than 6 mm on a 12 mm slab or 10 mm on a 20 mm slab is not recommended.

6.5 COUNTERTOP INSTALLATION

Furniture:

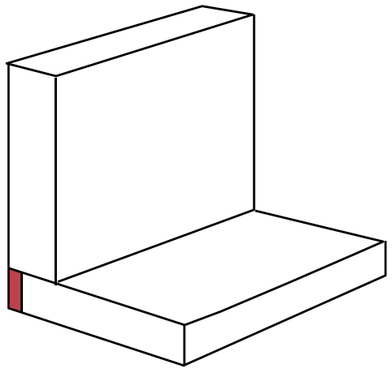
Furniture must be in perfect condition and level before installing the countertop.Cabinets must be secured to each other and then secured to the wall.

Expansion joints:

Given the irregularities found in walls and floors and possible structural movements in the building, leaving a 3 mm perimeter expansion gap between the countertop and walls is recommended.

To allow for expansion on vertical panels or waterfall legs, a 3mm space between the vertical panel/waterfall leg and floor is recommended.

All gaps/joints should be sealed with a flexible sealant.All gaps/joints should be sealed with a flexible sealant.



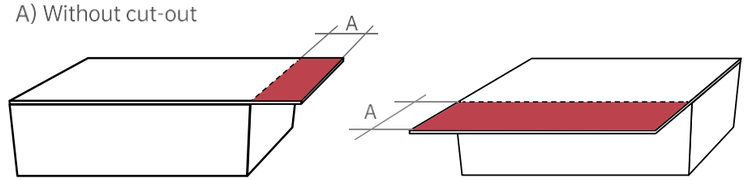
6.6 Overhang

Please consider the below recommendations regarding maximum dimensions of unsupportedoverhangs when designing countertops.

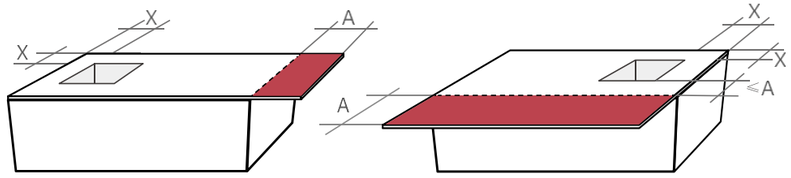
For high use and higher load areas, please reduce the maximum allowed dimensions for unsupported overhangs.

1. Full side overhang

A) Without cut-out

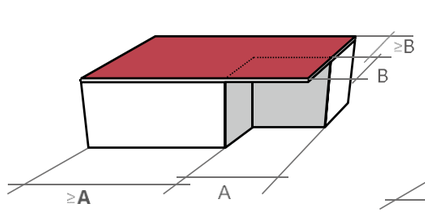


B) With cut-out

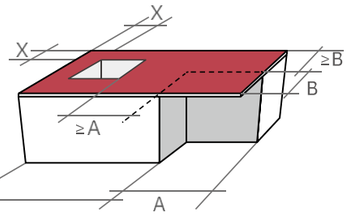


2. Partial overhang

A) Without cut-out



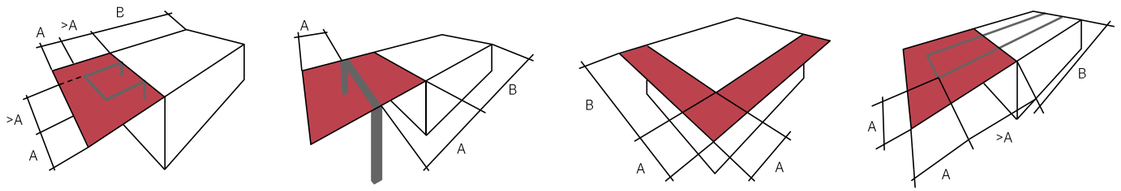
B) With cut-out



Please bear in mind that overhangs are not structural elements designed for high loads.

Thicknesses	
12 mm	20 mm
A ≤ 350 mm	A ≤ 500 mm
----------	----------
X ≥ 100 mm	X ≥ 100 mm
A ≤ 500 mm	A ≤ 1000 mm
B ≤ 200 mm	B ≤ 400 mm
----------	----------
X ≥ 100 mm	X ≥ 100mm

More examples of countertops with overhangs



6.7Outdoor Countertops

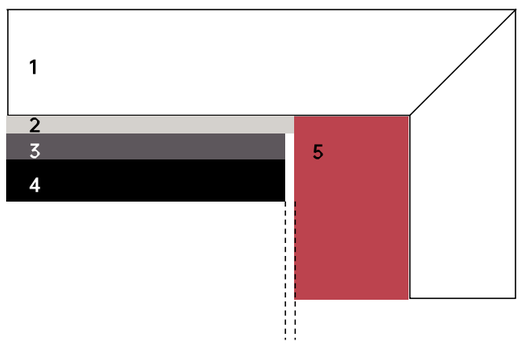
NABEL recommends the use of exterior grade adhesives for outdoor applications/installations.

If there is no such substructure/support available, covering the top of the existing structure with reinforced cement panels is recommended.

When installing outside, avoid the use of wood or agglomerate planks due to their tendency to expand and contract as the weather changes.

Using flexible adhesives such as liquid nails, silicon or similar to secure an exterior NABEL countertop is not recommended.

To glue the 45º angles, it is recommended to use an adhesive that is suitable for outdoor use and resistant to UV rays



1 NABEL Slab
2 Selected adhesive
3 Reinforced cement plank

4 Brick / stone / concrete base
5 NABEL reinforcement

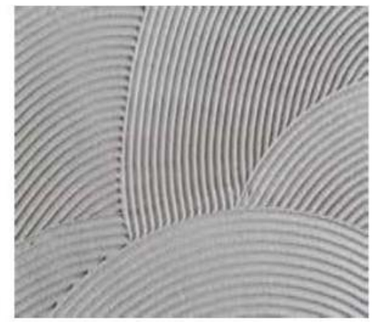
HOW TO APPLY ADHESIVE

It is recommended to follow these steps to guarantee a proper adhesion between Nabel slabs and support material.

1. Spread the adhesive over the substrate using a minimum 10mm toothed trowel.

2. The toothed trowel that will be used to extend the adhesive on the back of the slab must have smaller teeth (square teeth of at least 3-4mm), in order to achieve a 100% adhesive surface coverage. Spread the adhesive on the back of the NABEL panels using a minimum 6mm toothed trowel.

Correct



Incorrect

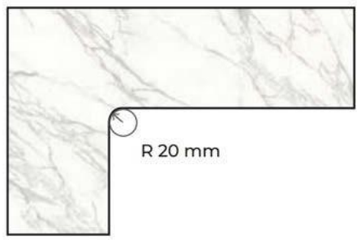
3. The adhesive must be applied in straight grooves, avoiding fan shapes, curved or similar patterns. The adhesive should be applied parallel to the shortest side of the slab to reduce the distance the air will travel to dissipate.

6.8 L-Shaped Countertops

L-shaped countertops

Dividing L-shaped countertops into several parts is recommended to avoid 90° corners in one part.

L-shaped countertops made of a single piece without a 45º angle must have a minimum radius of 20mm. An increase in the size of the corner radius will improve the performance of the countertop and reduce the risk of failure”



Make sure the furniture is in perfect condition and level before installing this type of countertop.

7 Wall Installation

7.1 NABEL Sintered Stone Product (Dot Adhesive) Wall Installation

1.Marking the Alignment

Use a chalk line to mark the position of each sintered stone slab on the wall.

2.Nail the base layer.

Measure and mark the positions for the expansion bolts/self-tapping screws, then use a hammer drill to make the holes.

3.Install the adhesive patch.

Drive in the screws, add the steel hangers, and tighten the screws to secure the installation.

A total of 6 to 8 steel hangers should be fixed, with the number of attachment points determined by the size of the slab. Larger slabs require more attachment points.

4.Grind the hangers.

Grind the steel hangers and the adhesive contact area on the back of the slabs to create a rougher surface, improving adhesion.

7.1 NABEL Sintered Stone Product (Dot Adhesive) Wall Installation

5.Apply adhesive for bonding.

Apply adhesive to the wall hangers and the back of the panels, then proceed with bonding and adjustments.

When bonding, always use a laser level to ensure the verticality and flatness are adjusted in a timely manner.

6.Insert precision spacing cards for a tight and accurate alignment.

Install the subsequent slabs in the same direction, and insert precision spacing cards between the joints to level them.

7.Grouting and cleaning the joints.

After the construction is completed, clean the surface of the slab with a sponge. After 24 hours, clean the seams and fill them with a joint sealing product.

7.2 Precision Seamless Thin Bonding Method (Applicable to Cement-Based Surfaces)

1.Substrate Inspection

Listen: Use a tapping hammer to knock on the wall and listen for hollow sounds to determine if there are any hollow areas (delamination) in the wall.

Look: Check the wall for obvious cracks, repairs, depressions, protrusions, water leakage, or the presence of putty or other residues.

2.Wall Leveling

Use an aluminum alloy straightedge as a guide and employ a laser level to establish reference lines. After marking the points, proceed with applying leveling strips.

Pre-apply a layer of mortar along the wall from top to bottom to create a straight reference line, typically no wider than 2 cm.

While plastering, move the straightedge up and down along the "reference line" to maintain good surface evenness. Each layer should be no thicker than 7-9 mm.

For wall installations with NABEL slabs, if there are connections between new and old walls or if the load-bearing capacity is insufficient, it's necessary to reinforce the wall with wire mesh or fiberglass mesh to prevent wall deformation and ensure sufficient adhesive strength to avoid slab detachment.

After leveling, recheck the verticality and flatness of both the wall and floor using a level and laser tool. The surface flatness of the substrate should have a deviation of less than 3 mm, and the verticality deviation should also be less than 3 mm.

3.Product Trial Laying

Check the flatness of the NABEL slab to ensure there are no warps or bowing at the edges or corners (using a straightedge).

Perform a trial layout according to the design drawings or the arrow direction on the back of the slab to ensure the pattern is intact.

Remove any protective film from the surface of the slab and prepare it for handling. Transport the slab to the inclined rack and clean the back of the slab using a wire brush to remove any aluminum powder residue.

4.Line Marking and Division

Based on the design drawings, use a chalk line to mark the position for each slab on the leveled wall. Then, calculate the required number of slabs and the processing method based on the marked lines.

7.2 Precision Seamless Thin Bonding Method (Applicable to Cement-Based Surfaces)

5.Board back cleaning

Clean the aluminum powder on the back of the Sintered Stone with a cleaning steel brush to avoid affecting the bonding strength;

The back and surrounding edges of the Sintered Stone should be cleaned of magnesium powder, floating dust, etc. to meet the requirement of hand wiping without dust It is prohibited to stick the back of the Sintered Stone with dust on it.

6.Installing Brackets

For high-altitude construction (above 3 meters), metal fasteners must be installed on the back of the slab to prevent it from falling. Typically, two fasteners are installed at the top of the slab.

If the ceiling height is insufficient, four fasteners should be installed on the sides of the slab, with two on each side.

7.Double-Sided Glue Application

Mix the specialized adhesive for the NABEL slabs. Using a 8mm notched trowel, apply the adhesive evenly to the back of the slab in a ridged pattern, following the shortest edge of the slab.

Next, scrape off about 2 cm of adhesive along the edges of the slab to prevent adhesive overflow during the leveling process, which could contaminate the joints. For the wall, use a 12mm notched trowel to apply the adhesive evenly along the short edge of the slab, ensuring the direction of the adhesive application on the wall matches the direction applied to the slab to facilitate air escape.

For the surrounding areas, use a 45°angle on the trowel to press the adhesive inward, preventing adhesive from overflowing.

8.Positioning and Mounting the Slab on the Wall

Use an electric suction cup or carrying bar to transport the NABEL slab to the installation area.

Attach the slab to the wall, ensuring placement aligns with the vertical lines projected by the laser level.

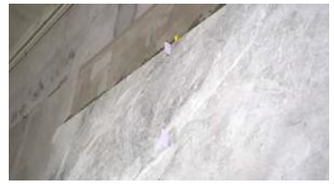
9.Pressing and Leveling

After attaching the NABEL slab to the wall, use a vibration tool repeatedly over the slab surface. Apply vibrations from bottom to top and from the center outward.

This process ensures the adhesive is firmly compressed in the middle while preventing downward slippage of the adhesive, which could cause voids at the top. Finally, use a spirit level to check and ensure the slab is properly leveled.

10.Insert Precision Leveling Spacers

Insert precision leveling spacers approximately every 60 cm between adjacent slabs.



11.Leveling Slab Joints

Use a laser level to check the vertical alignment and adjust the slab joints as needed. For uneven areas, use 502 adhesive combined with small ceramic pieces to press the slabs into alignment.

Once the alignment is finalized, secure the metal brackets on the back of the slabs with cement nails.

12.Cleaning and Joint Filling

After installation, clean the surface of the slabs with a sponge. After 28 days, clean the joints and fill them with joint sealant to complete the process.

SINTERED STONE **Use and Maintenance Standards**

The board is very easy to clean and does not require special maintenance work. The production process (involving very high-quality raw materials and high firing temperature) makes the surface of Nabel Sintered Stone non absorbent and almost completely pore free, which means that the cleaning operation is simple and efficient.

In fact, sintered stone structures do not allow dirt to penetrate into the interior of the plate.

1. Cleaning after installation

After processing and bonding the materials, clean the sintered stone surface to remove any possible contaminants (copper green, filler or adhesive residue, etc.). It is crucial to perform this step correctly, as improper operation may cause halos.

To clean the surface of the structure, we recommend using a large amount of water and liquid vacuum cleaners to quickly remove stains and remove any dirt that may deposit on the surface structure. It is important to complete the cleaning phase before the adhesive completely hardens, as given the surface structure, it will be more difficult to remove the adhesive after it has completely hardened.

For proper cleaning, please always follow the specific instructions provided by the manufacturer of cement and epoxy resin fillers and adhesives used for installing floor slabs to understand the products to be used, as well as the methods and waiting times.
If installing floor slabs outdoors, we recommend cleaning them immediately after installation at the coolest time of the day.
Do not use abrasive substances or equipment. Under no circumstances should hydrofluoric acid or products containing it be used.

It is necessary to use a slightly worn scratch resistant sponge and a large amount of water to eliminate residues of filler or epoxy resin adhesive after laying the board and before drying the product. It is crucial to use water-based products that are always clean and frequently replaced. Cleaning agents can be used for deep cleaning the filler manufacturer suggests that attention be paid to eliminating all halos. To improve efficiency, we recommend wiping the floor dry with absorbent paper to collect all resin residues and prevent them from depositing on the surface and producing opaque halos after water evaporation.

2. Regular cleaning

Before use, it is recommended to clean the entire surface with acidic products to remove halos and residue from the construction site. Thoroughly rinse with water to avoid copper rust on the surface.
For polished slabs, it is necessary to remove protective wax based components used for packaging between the slabs. These elements can be removed with a wooden shovel or industrial alcohol.

For the daily cleaning of Nabel Sintered Stone a soft cloth, warm water, and commercially available ceramic surface cleaning agents can be used. These must be diluted/rinsed according to the instructions of the detergent to avoid surface copper rust that may retain dirt.

Light or dark background finishes may require more frequent daily maintenance, especially if they are structured, heavily trafficked, or have direct external channels, as they often make dirt more noticeable. According to the type of structure, it is necessary to use a cloth and apply sufficient pressure to maintain surface cleanliness.

Please note that early cleaning can make it easier to remove stains. If left on the surface for a long time, some residues may require the use of specific cleaning products. Under no circumstances should hydrofluoric acid or products containing it be used.